

## REMARKS

This Amendment is filed in response to the Office Action dated September 10, 2007, which has a shortened statutory period set to expire December 10, 2007.

### Allowable Subject Matter

Applicant greatly appreciates the Examiner's indication of allowable subject matter. Specifically, Claims 6, 7, 12, 16, 27, 28, 33, and 37 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6, 7, 12, and 16 depend from Claim 1, which Applicant believes to be patentable. Similarly, Claims 27, 28, 33, and 37 depend from Claim 22, which Applicant believes to be patentable. Therefore, Applicant respectfully declines to amend Claims 6, 7, 12, 16, 27, 28, 33, and 37 herein.

### Applicant Addresses 101 Rejections & Informalities

The Examiner suggested amendments to Claims 22-23 and 25-39 to clarify the statutory subject matter and correct for informalities. Applicant has made such amendments in Claims 22-23 and 25-39. Therefore, Applicant requests reconsideration and withdrawal of the rejection of Claims 22-23 and 25-39 as well as the objection to Claims 25 and 26.

### Claims 1-5, 8-11, 13-15, 17-26, 29-32, 34-36, And 38-39 Are Patentable Over Sindhushayana And Vogel

Claim 1 recites in part:

computing an achievable user throughput for each valid data rate by **computing a product of a theoretical rate and 1 minus a packet error rate (PER)**.

The Second Office Action cited various passages (i.e. col. 6, line 59 to col. 7, line 16; col. 7, lines 36-41; col. 10, line 64 to col. 11, line 32) of Sindhushayana as teaching this limitation. Applicant traverses this characterization.

Col. 6, line 59 to col. 7, line 16 teaches setting a desired PER (step 300) and a target tail probability of error (step 302). Step 304 evaluates a rate at which a tail probability of error is greater than or equal to a target tail probability of error. Step 306 selects a data rate  $R_i$  at which a PER of packets received over a forward link will not exceed the target PER. In one embodiment,  $R_i$  is a data rate, an SINR threshold for correct detection of which is lower than and adjacent to a predicted SINR for a given tail probability of error. In another embodiment,  $R_i$  is any data rate, an SINR threshold for correct detection of which is lower than the predicted SINR for a given tail probability of error.

Col. 7, lines 36-41 teaches that a "true" packet event occurs when a mobile station detects a preamble and decodes the packet (wherein correctly decoding occurs if the packet's quality metric matches a quality metric contained in the packet).

Col. 10, line 64 to col. 11, line 32 (in reference to the system shown in FIG. 6) teaches that a signal arriving at the mobile station 602 from the base station 604 over the forward link 606a in packets is provided to a demodulator 608. The demodulator 608 measures an average SINR over the duration of each packet, and provides the average SINRs to a long-term SINR predictor 610. The long-term SINR predictor 610 predicts an SINR value of the next packet ( $OL\_SINR_{Predicted\_LT}$ ). In one embodiment, the predictor 610 predicts the value  $OL\_SINR_{Predicted\_LT}$  of the next packet in accordance with an open-loop method. The

OL\_SINR<sub>Predicted\_LT</sub> value is provided to a processor 616 and to a look up table 614. The look up table 614 maintains a set of SINR thresholds that represent the minimum SINR required to successfully decode a packet at each data rate. The processor 616 consults the look up table 614 to select a data rate  $R_i$  at which a PER of packets received from over a forward link will not exceed the target PER is selected. In one embodiment,  $R_i$  is a data rate, an SINR threshold for correct detection of which is lower and adjacent to a predicted SINR for a given tail probability of error. In another embodiment,  $R_i$  is a data rate, an SINR threshold for correct detection of which is lower than the predicted SINR for a given tail probability of error. The processor 616 further selects a data rate  $R_{i+1}$  at which a PER of packets received from over a forward link will exceed the target PER. In one embodiment,  $R_{i+1}$  is a data rate, an SINR threshold for correct detection of which is higher and adjacent to the predicted SINR for a given tail probability. In another embodiment,  $R_{i+1}$  is a data rate, an SINR threshold for correct detection of which is higher than the predicted SINR for a given tail probability of error.

Notably, none of these passages of Sindhushayana teaches the recited step of computing an achievable user throughput for each valid data rate by **computing a product of a theoretical rate and 1 minus a packet error rate (PER)**.

Vogel fails to remedy the deficiency of Sindhushayana with respect to Claim 1. For example, to optimize data throughput, Vogel determines a signal-to-noise (SNR) on an upstream channel at a target packet error ratio. Col. 11, lines 43-45. At this point, the parameters for data transmission by the cable modems on the upstream channel can be determined. Col. 11, lines 45-47. Exemplary parameters include symbol rate, modulation type, or error correction levels. Col. 11, lines 53-55. Then, the

determined parameters can be associated with the SNR and the target packet error ratio. Col. 11, lines 49-50. Finally, the use of the determined parameters in the upstream channel can be negotiated. Col. 11, lines 50-52. Thus, Vogel also fails to teach the recited step of computing an achievable user throughput for each valid data rate by **computing a product of a theoretical rate and 1 minus a packet error rate (PER)**.

Based on the above reasons, Applicant requests reconsideration and withdrawal of the rejection of Claim 1.

Claims 2, 4-5, 8-11, 13-15, and 17-18 depend from Claim 1 and therefore are patentable for at least the reasons presented for Claim 1. Based on those reasons, Applicant requests reconsideration and withdrawal of the rejection of Claims 2, 4-5, 8-11, 13-15, and 17-18.

Claim 22 recites in part:

a third set of instructions for computing an achievable user throughput for each valid data rate by computing a product of a theoretical rate and 1 minus a packet error rate (PER).

Therefore, Claim 22 is patentable for substantially the same reasons presented for Claim 1. Based on those reasons, Applicant requests reconsideration and withdrawal of the rejection of Claim 22.

Claims 23, 25-26, 29-32, 34-36, and 38-39 depend from Claim 22 and therefore are patentable for at least the reasons presented for Claim 22. Based on those reasons, Applicant requests reconsideration and withdrawal of the rejection of Claims 23, 25-26, 29-32, 34-36, and 38-39.

Claim 19 recites:

A transmission rate for a packet, the transmission rate being computed based on a received signal strength indicator (RSSI) of one

or more packets, RSSI thresholds of possible data rates, **theoretical universal data protocol (UDP) rate values of the possible data rates**, and packet error rates (PERS) of the possible data rates.

Sindhushayana fails to disclose or suggest a transmission rate being computed based on theoretical UDP rate values of the possible data rates. Vogel fails to remedy the deficiency of Sindhushayana with respect to Claim 19. Specifically, Vogel fails to teach anything about UDP rate values being used to compute a transmission rate. Notably, the Second Office Action cites no passage in either reference that teaches UDP rate values. Therefore, Applicant requests reconsideration and withdrawal of the rejection of Claim 19.

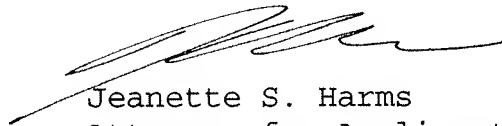
Claims 20-21 depend from Claim 19 and therefore are patentable for at least the reasons presented for Claim 19. Based on those reasons, Applicant requests reconsideration and withdrawal of the rejection of Claims 20-21.

CONCLUSION

Claims 1-2, 4-23, and 25-39 are pending in the present application. Allowance of these claims is respectfully requested.

If there are any questions, please telephone the undersigned at 408-451-5907 to expedite prosecution of this case.

Respectfully submitted,



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